A STUDY TO EVALUATE THE EFFECTIVENESS OF PURSED-LIP BREATHING EXERCISE IN REDUCTION OF DYSPNEA AMONG CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENT IN SELECTED HOSPITALS OF KANYAKUMARI DISTRICT

DISSERTATION SUBMITTED TO

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY CHENNAIIN PARTIAL FULFILLMENT OF REQUIREMENT FOR THEAWARD OF DEGREE OFMASTER OF SCIENCE IN NURSING

APRIL-2016

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Internal Examiner External Examiner

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A DISSERTATION SUBMITTED TO THE TAMILNADU
Dr. M.G.R. MEDICAL UNIVERSITY CHENNAI, IN
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BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled**," A Study To Evaluate The Effectiveness Of Pursed- Lip Breathing Exercise In Reduction Of Dyspnea Among Chronic Obstructive Pulmonary Disease Patients In Selected Hospitals Of Kanyakumari District"** is a bonafide work done by **Ms. J. Glory Joy**, M.Sc (N) II Year, Global College of Nursing, Nattalam in partial fulfillment of the University rules and regulations for the award of M.Sc (N) degree under my guidance and supervision during the academic year April 2016.

Place: Nattalam
Date:

Signature

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Nattalam

DECLARATION

I hereby declare that the present dissertation titled **"A STUDY TO EVALUATE THE EFFECTIVENESS OF PURSED- LIP BREATHING EXERCISE IN REDUCTION OF DYSPNEA AMONG CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS IN SELECTED HOSPITALS OF KANYAKUMARI DISTRICT"** is the outcome of the original research work under taken and carried out by me under the guidance of **Mrs. Roselind Immanuel M.Sc(N),** Global college of Nursing Nattalam. I also declare that the material of this has not formed in any way, the basis for the award of any degree or diploma in this university or any universities.

Place :Nattalam
Date :

J. GLORY JOY
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INVESTIGATOR

ABSTRACT

"When you own your breath, nobody can steal your peace."

-unknown

Introduction

Chronic obstructive pulmonary disease is a progressive disease that makes it hard to breathe. Cigarette smoking is the leading cause of Chronic obstructive pulmonary disease. It includes two main conditions emphysema and chronic bronchitis. It is the major cause of disability and it is the third leading cause of death.

Problem statement

A study to evaluate the effectiveness of pursed- lip breathing exercise in reduction of dyspnea among chronic obstructive pulmonary disease patients in selected hospitals of kanya kumari district

Objectives of the Study

- To assess the pre test and post test level of dyspnea for patients with Chronic obstructive pulmonary disease in experimental group.
- To assess the pre test and post test level of dyspnea among Chronic obstructive pulmonary disease in control group.
- To evaluate the effectiveness of pursed lip breathing exercise on dyspnea among Chronic obstructive pulmonary disease in experimental group and control group.
- To associate the pretest level of dyspnea with Chronic obstructive pulmonary disease of the experimental and control group with their selected demographic variables.

Research Methodology

The investigator adopted Widenbach's Prescriptive Helping Art of Clinical Nursing Theory as the conceptual framework for the study. Quasi experimental pre and post test control group design was used and the formal consent was obtained from Government Hospital, Thuckalay and the investigator selected 60 samples using purposive sampling technique. Pursed-lip breathing exercise is the intervention used to reduce dyspnea among chronic obstructive pulmonary patient. Dyspnea assessment scale is used to evaluate pre and post test score of dyspnea.

Research Finding

Descriptive and inferential statistics were used to analyze the data. Analysis of demographic variables was done in terms of frequency and percentage distribution. Comparison of post test level of dyspnea between the experimental group and control group was analysed by 't' test. Association of pre test level of dyspnea in the experimental group and control group with demographic variables was analysed by using chi-square test.

The findings concluded that among experimental group the mean pre-test score was 2.7 with standard deviation with 0.7. The mean post-test was 1.6 with standard deviation 0.4. The mean difference was 1.1. The obtained 't' value was 13.78, where as the table value was 2.04. It was significant at $p > 0.05$ level. .Hence it was inferred that pursed-lip breathing exercise was highly effective in reducing of dyspnea among chronic obstructive pulmonary disease patients.

Conclusion

The investigator could find that pursed-lip breathing exercise was very much effective and beneficial in reducing dyspnea among chronic obstructive pulmonary disease patient.

CHAPTER – I

INTRODUCTION

"For breath is life, so if you breathe well you will live long on earth."

– Sanskrit Proverb

BACKGROUND OF THE STUDY

"When you can't breathe, nothing else matters", is the mantra of the American Lung Association. Chronic obstructive pulmonary disease, is a group of lung diseases that cause obstruction of the airways and breathing difficulties. This group includes chronic bronchitis with airflow obstruction, chronic obstructive airway disease and emphysema. These separate terms are not often used anymore and are now referred to collectively as Chronic Obstructive Pulmonary Disease. So, the exercise training and rehabilitation have been shown to reduce disability in many chronic respiratory diseases. The aim of pulmonary exercise is to break this vicious cycle and help the Chronic Obstructive pulmonary disease patients to participate in daily activities. It is known to improve quality of life and exercise tolerance in Chronic Obstructive Pulmonary Disease **(Dechman G**, **2008).**

Chronic obstructive pulmonary disease results from increased resistance to airflow because of airway obstruction or airway narrowing. Chronic Obstructive Pulmonary Disease (COPD) is a progressive inflammatory disease characterized by chronic obstruction in the peripheral bronchus and pulmonary emphysema. The disease is disabling with symptoms such as chronic cough, phlegm, wheezing, shortness of breath and increased infections of the

respiratory passage. Changes in the lungs result in mucus hypersecretion, dysfunction of the cilia, airflow limitation and hyper inflation of the lungs, gas exchange abnormalities, pulmonary hypertension and cor- pulmonale. Persons with Chronic obstructive pulmonary disease are greatly under estimated because the disease is usually not diagnosed until it is moderately advanced. Patients usually seek medical help when they have an acute respiratory infection, with dyspnea being the main concern. Dyspnea is often progressive, and initially occurs with exertion, gradually interferes with daily activities and in late stages dyspnea may be present at rest also. The person becomes more of a chest breather, relying on the inter costal and accessory muscles rather than effective abdominal breathing. Breathing exercises may assist the patient during rest and activity by decreasing dyspnea, improving oxygenation, and slowing the respiratory rate.

Pursed-lips breathing (PLB) is a maneuver that is frequently taught to patients with chronic obstructive pulmonary disease (COPD) in respiratory exercise programs to improve breathing efficiency and better manage dyspnea during activities of daily living. Researchers first became interested in Purse lip breathing when emphysema patients were clinically observed to breathe instinctively with the lips semi-closed in an attempt to minimize dyspnea. Although this technique had been described and recommended in the mid-1950s and beginning of the 1960s, the first studies designed to establish the benefits and physiological effects of Purse lip breathing were not published until the mid-1960s, even now-forty years later-there are few studies on purse lip breathing in the literature. The pursed lip breathing is one of the simplest ways to control shortness of breath. It is a technique of exhaling

against pursed lips to prolong exhalation, preventing bronchiolar collapse and air trapping **(SPAHIJA,2007).**

NEED FOR THE STUDY

Chronic obstructive pulmonary disease is an important cause of morbidity and mortality worldwide. As the disease advances, some patients develop systemic manifestations, among them exercise intolerance, peripheral muscle dysfunction, pulmonary hypertension, malnutrition and exacerbations that often requires hospitalization. Dyspnea which is the main symptom, cause progressive loss of functional capacity until even the simplest activities of daily living are affected. This leads to loss of autonomy and the development of a considerable degree of disability, with consequent psychosocial changes and quality of life.

Chronic Obstructive Pulmonary Disease (COPD), now the fourth leading cause of death in the world, continuous to increase in the developing countries. The World Health Organization (WHO) expects Chronic Obstructive Pulmonary Disease to be the third most common cause of death in the world by 2020.

In 2010, almost 24 million adults over the age of 40 in India had chronic obstructive pulmonary disease. Data monitor expects this number to increase 34% to approximately 32 million by 2020. Fewer than half of the estimated 23.68 million prevalent cases in 2010 were in the population between the ages of 40 and 60 years (8.25 million), which indicates that chronic obstructive pulmonary disease is a disease of aged in India.The prevalence rates of chronic obstructive pulmonary disease in males varied from 2.12% to 9.4% in north India and from 1.4% to 4.08% in south India. The

respective ranges for females were 1.33% - 4.9% in north India and 2.55% - 2.7% in south India. The median values of these prevalence rates are 5% for males and 2.7% for females.

The mortality varies in different countries, where it is related to the prevalence of smoking in the population. Mortality is high in China, Mangolia, Eastern and Central Europe, the United Kingdom, Iceland, Australia and New Zealand. In Sweden it is estimated as 8% of the population over 50 years of age suffer from chronic obstructive pulmonary disease. It is the fourth leading cause of death in the US, claiming the lives of more than 120,000 Americans in 2002 (National centre for Health Statistics, 2002). Nearly 10.7 million US adults have been diagnosed with chronic obstructive pulmonary disease, but as many as 24 million US adults have evidence of impaired lung function. Prevalence of chronic obstructive pulmonary disease in certain Asian countries includes China (3%), Korea (7.8%), Japan (10.9%), Thailand (7.11%) and Iran (4.65%).

Chronic obstructive pulmonary disease is estimated to be responsible for more than 13.4 million physician visits and 13% of hospitalizations nationally. These hospitalizations are usually caused by acute exacerbations characterized by an increase in symptoms including dyspnea or shortness of breath (SOB), cough, wheezing and sputum production, that affects an individual's quality of life more than does the physiological impairment. Despite optimal medical and pharmacological therapy, most people with chronic obstructive pulmonary disease continue to suffer chronic and progressive dyspnea and other symptoms of cough and fatigue.

Binazzi (2011) conducted a randomized, control study at Los Angeles to assess the efficacy of pursed lip breathing among COPD: a breathing pattern retraining strategy for dyspnea reduction. 40 samples were randomized to 1) pursed lip breathing 2) expiratory muscle training or 3) control. Changes in dyspnea and functional performance was assessed by modified Borg after 6 minute walk distance (6MWD), shortness of breath Questionnaire, Human Activity Profile and physical function scale of short form 36-item Health Survey. The study result reveals that there is a significant reduction for the modified Brog Scale after 6 MWD (P=0.05) and physical function (P=0.02) from baseline to 12 weeks were only present for pursed lip breathing. The findings suggests that pursed-lips breathing provided sustained improvement in exertional dyspnea and physical function.

S. E. Roberts (2009) Conducted a study on the use of pursed lips breathing in chronic obstructive pulmonary disease. The study reveals that the direction of effect for PLB was consistently towards benefit, the evidence demonstrates that in stable COPD pursed lips breathing increases oxygen saturation and tidal volume, reduces respiratory rate at rest and reduces time taken to recover to pre-exercise breathlessness levels.

The researcher experienced that many of her neighbourhood having dyspnea related to some respiratory problems. The researcher felt that pursed lip breathing is effective in relieving dyspnea. Hence, the researcher interested in explaining pursed lip breathing exercise among chronic obstructive pulmonary disease patients.

PROBLEM STATEMENT

A study to evaluate the effectiveness of pursed- lip breathing exercise in reduction of dyspnea among chronic obstructive pulmonary disease patients in selected hospitals of Kanyakumari district.

OBJECTIVES OF THE STUDY

- To assess the pre-test and post-test level of dyspnea for patients with chronic obstructive pulmonary disease in experimental group.
- To assess the pre-test and post-test level of dyspnea for patients with chronic obstructive pulmonary disease in control group.
- To evaluate the effectiveness of pursed-lip breathing exercise on dyspnea among chronic obstructive pulmonary disease patients in experimental group and control group.
- To associate pre-test level of dyspnea for patients with chronic obstructive pulmonary disease of the experimental and control group with their selected demographic variables.

HYPOTHESIS

H_1- There will be a significant difference in the pre and post test level of dyspnea in the experimental and control group..

H_2- There will be a significant difference in the post test level of dyspnea between experimental and control group.

H_3- There will be a significant association between pre test level of dyspnea with the selected demographic variables.

OPERATIONAL DEFINITIONS

1. **EVALUATE**

   To judge or determine the significance, worth, quality or form an idea.

   In this study, evaluate is to determine the result of pursed lip breathing exercise to reduce dyspnea among patients with Chronic Obstructive Pulmonary Disease.

2. **EFFECTIVENESS**

   The ability to produce specific result or to exert a specific measurable influence.

   In this study, effectiveness is the usefulness of pursed lip breathing exercise to reduce dyspnea among chronic obstructive pulmonary disease.

3. PURSED-LIP BREATHING EXERCISE

It is a respiration characterized by deep inspirations followed by prolonged expiration through pursed lips.It is done to increase expiratory airway pressure, improve oxygenation and help to prevent early airway closure.

In this study, pursed lip breathing exercise is a technique in which breathe in slowly through nose for two counts and breathe out slowly and gently through pursed lips while counting to four for 4-5 times a day to reduce dyspnea.

4. DYSPNEA

It is a difficult or labored breathing.

In this study, dyspnea refers patient with shortness of breath.

5. COPD

It refers to a group of lung diseases that block airflow and make breathing difficult. Emphysema and chronic bronchitis are two most common conditions of Chronic Obstructive Pulmonary Disease.

In this study, it refers obstruction of lung airflow results breathing difficulty.

ASSUMPTION

The study assumes that

- Chronic obstructive pulmonary disease can affect person above 40 years of age.
- The pursed lip breathing exercise reduces dyspnea among chronic obstructive pulmonary disease patients.
- There is no adverse effect in pursed-lip breathing exercise.

DELIMITATION

The study is delimited to

- Period of four weeks
- sample of 30 in each experimental and control group.
- those who are clinically diagnosed to have chronic obstructive pulmonary disease
- age group between 41-60 years
- those who are willing to participate.

ETHICAL CONSIDERATION

The study was conducted after the approval from research and ethical clearance committee of Global College of Nursing. Written consent was obtained from each participants of the study.

CONCEPTUAL FRAME WORK

The conceptual frame work for research study presents the measure on which the proposed study is based. The framework provides the perspective from which the investigator views the problem.

The study is based on the concept the administration of intervention (pursed lip breathing exercise) will enable effectiveness in reduction of dyspnea among chronic obstructive pulmonary disease patients .The investigator adopted the Widenbach's helping art of clinical nursing theory (1964) as a base for developing the conceptual framework.

Ernestin Widenbach proposes helping art of clinical nursing theory in 1964 for nursing, which describes a desired situation and the way to attain it. It directs action towards the explicit goal.

This theory has 3 factors

1. Central purpose
2. Prescription
3. Realities

1. **Central purpose**

   It refers to what the nurse want to accomplish. It is the overall goal towards which a nurse strives.

2. **Prescriptions**

   It refers to plan of care for a patient. It will specify the nature of action that will fulfill the nurse's central purpose.

3. **Realities**

   It refers to the physiological, psychological, emotional and spiritual factors that come in to play in situation involving nursing actions. The five realities identified by Widenbach's are agent, recipient, goal, means activities and framework.

The conceptualization of nursing practice according to this theory consists of 3 steps as follows.

Step I : Identifying the need for help

Step II : ministering the needed help

Step III : Validating that the need for help was met.

STEP I : Identifying the need for help

This step involves determining the need for help. The patients are identified based on the inclusive and exclusive criteria; convenience sampling technique was used to assign patients in experimental and control group. Pre assessment level of dyspnea was assessed in both groups by using Modified dyspnea assessment scale.

STEP II: Ministering the needed help

After the pre-assessment level of dyspnea in the experimental and the control groups , pursed lip breathing exercise was given for experimental group.

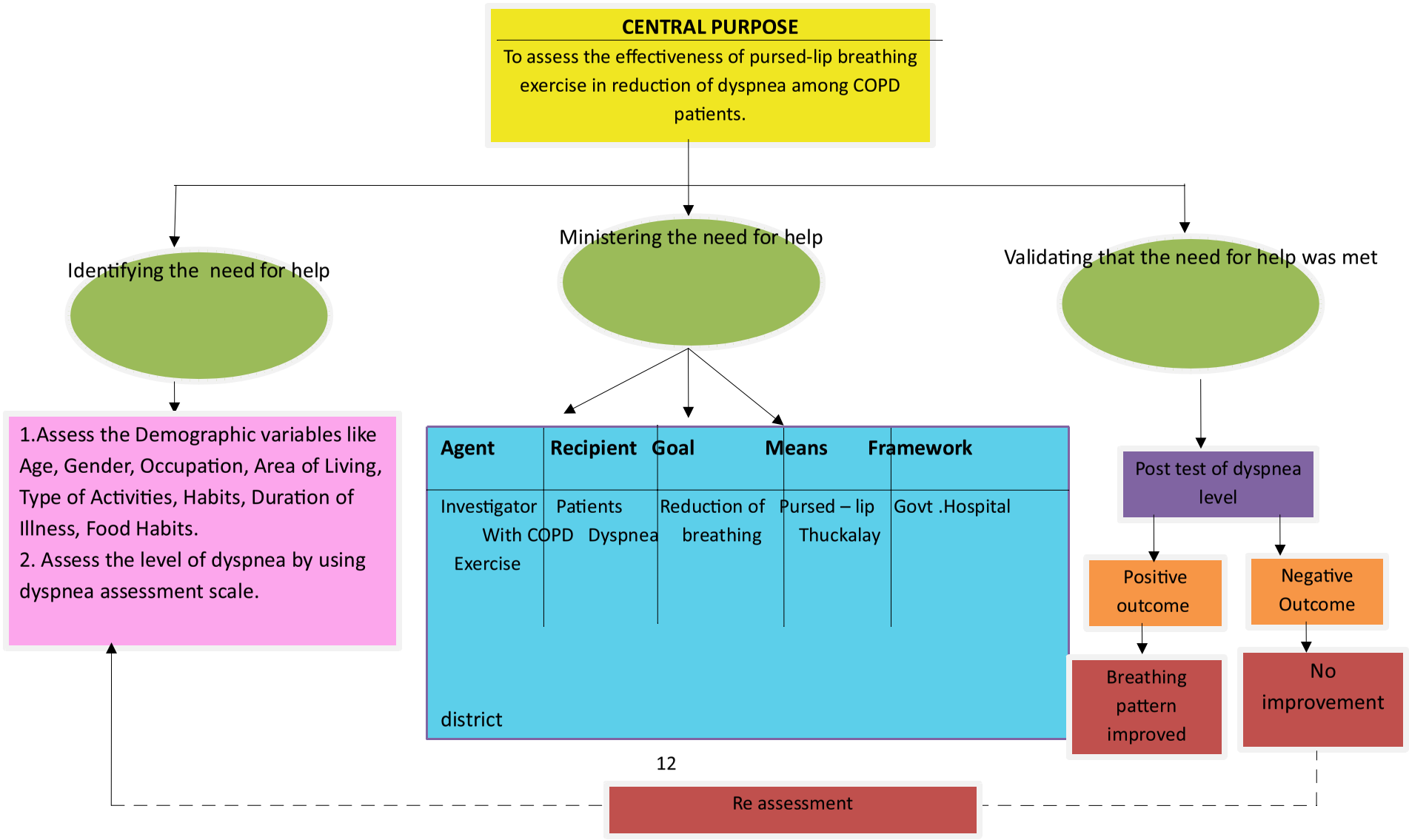
Agent	:	Investigator
Recipient	:	COPD patients
Goal	:	To reduce dyspnea
Means	:	Pursed lip breathing exercise for experimental group.
Frame work	:	Selected Hospitals of Kanyakumari District.

STEP III : Validating that the need for help was met

This refers to a collection of evidence that shows the patients needs have met and that their functional ability has been restored as a direct result of the nurse's action. This is accomplished in the study by means of post assessment level of dyspnea after rendering pursed lip breathing exercise. It is followed by analysis of the

findings. The outcomes may be positive or negative. Positive outcome reveals improvement in intervention and negative outcome shows no improvement and needs reassessment.

FIG : 1 MODIFIED WIDENBACH'S HELPING ART OF CLINICAL NURSING



CHAPTER II

REVIEW OF LITERATURE

Review of literature is an important step in the development of any research project. It helps the investigator to analyze what is known about the topic and to describe methods of inquiry used in earlier work including their success and shortcoming. It gives a broad understanding of the problem.

Nursing research may be considered as a continuing process in which knowledge from earlier studies is an integral part. Capitalizing on the review of expert research can be fruitful in providing helpful idea and suggestion. **(Treece and Treece -1986)**

Polit (2004) stated that the literature review involved systemic identification, locating, scrutinizing and summary of written material that contains information to support the research problem. The sources to obtain the information on the topic were books, journals, abstracts, medline, unpublished dissertations and internet.

Literature relevant for this study were received and has been organized in the following sequence:

I. Studies related to Chronic obstructive pulmonary disease
II. Studies related to pursed-lip breathing exercise
III. Studies related to pursed-lip breathing exercise on Chronic obstructive pulmonary disease patients.

I. STUDIES RELATED TO CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENT

Sarah woodford [2015] conducted a study on to explore whether patients with Chronic obstructive pulmonary disease have reduced breathlessness through using breathing exercises. This study indicated that breathlessness is a progressive symptom that patients with Chronic obstructive pulmonary disease experience and can affect the patients quality of life. The study concluded that thePulmonary rehabilitation is recognized as effective in helping to alleviate symptoms of breathlessness.

Marie Carmen valenza [2014] conducted a study on effectiveness ofcontrolled breathing techniques on hospitalized patients with Chronic Obstructive Pulmonary Disease and conducted a randomized clinical study with 46 male subject 67-86 years old hospitalized with acute Chronic Obstructive Pulmonary Disease exacerbation and it measured post intervention dyspnea, anxiety and depression.The study concluded that controlled breathing exercises significantly improved breathing and all the measured variables improved in the intervention group.

Seiichi kobayashi [2014] conducted a study on the burden of chronic obstructive pulmonary disease in the elderly population. The randomised study reveals in total, 279 patients with stable Chronic Obstructive Pulmonary Disease (median age, 74 years) were identified; 86% of these patients were elderly (65 years of age or older).The study concluded that among elderly Chronic Obstructive Pulmonary Disease patients, especially those who were 75 years of age or older, had significantly more cases of dyspnea, lower exercise tolerance, and poorer Activities of Daily Living and a higher incidence of severe exacerbations than younger patients (all $P<0.05$)

Janice M. Roper (2010) conducted study on validation of a structured questionnaire and prevalence of chronic obstructive pulmonary disease in rural area of Mysore. The study included 900 adults above 40 years. The instruments used were structured questionnaire and spirometry. Data was collected by survey method. The study reveals that the structured questionnaire is a useful tool for the screening of chronic obstructive pulmonary disease in field studies and the total prevalence of chronic obstructive pulmonary disease was 7.1%. Males had a higher prevalence (11.1%) compared to females (4.5%).

David M. G. Halpin [2006] conducted a study on Chronic Obstructive Pulmonary DiseaseThe Disease and Its Burden to Society. This study reveals that Currently, Chronic Obstructive Pulmonary Disease is the fifth leading cause of death worldwide, and despite advances in management, mortality is expected to increase in the coming decades, in marked contrast to other chronic diseases. The study concluded that the burden of Chronic Obstructive Pulmonary Disease to patients and their families and carriers is high, both in terms of health-related quality of life and health status

Dechman G et al [2003] conducted a study on evidence underlying breathing retraining in people with stable Chronic obstructive pulmonary disease patients. It reveals pursed-lip breathing exercise slows the respiratory rate and evidence suggest that this decreases the resistive pressure drop across the airways and therefore decreases airway narrowing during expiration. The researcher concluded that the PLBaccounts decreased dyspnea when people experience using this technique..

R Gosselink [2000] conducted a study on breathing techniques in patients with chronic obstructive pulmonary disease under randomized controlled trials. This

study reveals the patients with Chronic Obstructive Pulmonary Disease breathing techniques aim to relieve symptoms by increasing strength and endurance of respiratory muscle, optimizing the pattern of thoraco abdominal motion and reducing dynamic hyperinflation of rib cage and improving breathing. The study concluded that the breathing techniques found to be effective in patient with Chronic Obstructive Pulmonary Disease got symptoms relieved and improved breathing pattern.

II. STUDIES RELATED TO PURSED- LIP BREATHING EXERCISE

Lf cabral et al [2014] conducted a study on pursed lip breathing improves exercise tolerance in chronic obstructive pulmonary disease.40 stable Chronic Obstructive Pulmonary Disease patients with age 40-75 years selected.in a randomized order,all patients performed pursed lip breathing and control breathing. It reveals the nine patients who increased their endurance time by more than 25% during Pursed Lip Breathing (6.42± 2.36 vs 10.51± 3.83 min; $p<0.05$) were considered as improver group. The study concluded that Pursed Lip Breathing improved the arterial oxygenation and breathing pattern in the analyzed subgroups.

Mohsen Adib- Hajbaghery [2011] conducted a study on effects of pursed lip breathing on ventilation and activities of daily living in patients with Chronic Obstructive Pulmonary Disease. A quasi experimental study was conducted on 40 patient in kashan. Spirogram and Arterial Blood Gas are tested before and after three month of exercise and airway questionnaire 20 was used to assess breathing. This study indicated that oxygen saturation was significantly increased ($p<0.05$) and a tendency towards an increased in paco2 was observed after three weeks of exercise. In addition a decrease in paco2 ($p<0.05$) and the respiratory rate ($p<0.001$) was

observed. The study concluded that the breathing retraining program can improve breathing, and the levels of activities of daily living.

Margaret A. Nield et al [2007] conducted a randomized study on efficacy of pursed lip breathing for dyspnea reduction. A randomized controlled design was used .subjects recruited from outpatient pulmonary clinic. The study reveals forty subjects with chronic obstructive pulmonary disease [age=65±9] (mean ± standard deviation) years.significant reductions for the modified borg scale after 6 Minute walk test (p=.05) and physical function (p=0.02) from baseline to 12 weeks were only present for pursed lips breathing.The study concluded that Pursed lip breathing exercise provide sustained improvement in exertional dyspnea and physical function.

Alejandro Grassino [2005] conducted a study on Effects of Imposed Pursed-Lips Breathing on Respiratory Mechanics and Dyspnea at Rest and During Exercise in Chronic Obstructive Pulmonary Disease . Eight Chronic Obstructive Pulmonary Disease patients with mean age of 58± 11 years were selected. Wearing a tight fitting transparent facemask, patients breathed for 8 min with or without Pursed Lip Breathing at rest. This study reveals that PLB can have a variable effect on dyspnea when performed volitionally during exercise by patients with Chronic Obstructive Pulmonary Disease. The study concluded that the effect of Pursed Lip Breathing on dyspnea is related to the combined change that it promotes breathing, tidal volume and Expiratory End Lung Volume .

Roberto Bianchi [2000] conducted a study on Chest Wall Kinematics and Breathlessness During Pursed-Lip Breathing in Patients With Chronic Obstructive Pulmonary Disease. This study reveals that thirty patients with mild-to-severe Chronic Obstructive Pulmonary Disease were studied. Compared to spontaneous

breathing, patients with Pursed Lip Breathing exhibited a significant reduction (mean ± SD) in end-expiratory volume of the CW (Vcw) [Vcwee; − 0.33 ± 0.24 L, $p < 0.000004$], and a significant increase in end-inspiratory Vcw (Vcwei; + 0.32 ± 0.43 L, $p < 0.003$).. The study concluded that Pursed lip breathing decreases Vcwee and reduces breathlessness.

Renato claudino (2012) conducted a study onpursed lip breathing in chronic obstructive pulmonary disease client. According to the findings, the Pursed Lip Breathing provides: changes on arterial gases, which are characterized by increased oxygen saturation and partial pressure of oxygen; ventilatory pattern with decreased respiratory rate and increased expiratory time and tidal volume; respiratory mechanics, by recruiting the expiratory abdominal muscles and muscles of the rib cage and accessories inspired; decrease in oxygen consumption; alterations in cardiac autonomic modulation induced by increase in parasympathetic activity and, ultimately, improved quality of life of these patients. The Pursed Lip Breathing is considered a maneuver of great importance to have a positive effect on various systems and on the quality of life of patients with Chronic Obstructive Pulmonary Disease.

III. STUDIES RELATED TO PURSED LIP BREATHING EXERCISE ON CHRONIC OBSTRUCTIVE PULMONARY PATIENTS

Fateme S Izadi-Avanji [2011] conducted a study on effects of pursed lip breathing on Dyspnea and activities of daily living in patients with Chronic Obstructive Pulmonary Disease. A quasi experimental study was conducted in Iran. This indicates that O2sat was significantly increased ($P<0.05$) and a tendency toward an increase in PaO2 was observed after three weeks of exercise. In addition, a

decrease in PaCO2 ($P<0.05$) and the respiratory rate ($P<0.001$) was observed. The researcher concluded that after pursed lip breathing exercisebreathing pattern improved ($P<0.001$) was observed.

S. E. Roberts (2009) Conducted a study on the use of pursed lips breathing in chronic obstructive pulmonary disease under purposive sampling . The study reveals that the direction of effect for Pursed Lip Breathing was consistently towards benefit, the evidence demonstrates that in Chronic Obstructive Pulmonary Disease, pursed lips breathing increases breathing ,oxygen saturation and tidal volume, reduces respiratory rate at rest and reduces time taken to recover to pre-exercise breathlessness levels.

CR wilson, PT [2009] conducted a study on the use of pursed lips breathing in chronic obstructive pulmonary disease: a systematic review of the evidence. Moderate quality evidence demonstrates that in Chronic Obstructive Pulmonary Disease pursed lips breathing increases oxygen saturation and tidal volume, reduces respiratory rate at rest and reduces time taken to recover to pre-exercise breathlessness levels. One RCT showed reduction in exertional dyspnoea and improvement in functional performance at 3 weeks . The researcher suggests that patients with Chronic Obstructive Pulmonary Disease respond equally to Pursed Lip Breathing: those with moderate to severe Chronic Obstructive Pulmonary Disease are most likely to benefit.

Spahija J [2007] conducted a study on effects of imposed pursed-lips breathing on dyspnea at rest and during exercise in Chronic Obstructive Pulmonary Disease. This study reveals that Pursed Lip Breathing can have a variable effect on dyspnea when performed volitionally during exercise by patients with Chronic

Obstructive Pulmonary Disease. The researcher concluded that the effect of Pursed Lip Breathing on dyspnea is related to the combained change that it promotes in the breathing pattern and their impact on the available capacity of the respiratory muscles to meet the demands placed on them in terms of pressure generation.

Faager G [2005] conducted a study on influence of spontaneous pursed lips breathing on walking endurance and oxygen saturation in patients with moderate to severe chronic obstructive pulmonary disease. This study reveals that when spontaneous pursed lips breathing was useful technique to improve breathing, increase walking endurance and reduce oxygen desaturation during walking in patients with moderate to severe chronic obstructive pulmonary disease.

Garrod R et al [2000] conducted a study on an evaluation of the acute Impact of pursed lip breathing on walking distance in non spontaneous pursed lips breathing in chronic obstructive pulmonary disease patients. A comparative study conducted for 200 .Among half of them given Pursed Lip Breathing and other half given non-Pursed Lip Breathing. This study shows Pursed Lip Breathing exercise results in improving breath pattern, compared with non-Pursed Lip Breathing.

Gail Dechman et al [2000] conducted a study on Evidence Underlying pursed-lip Breathing Retraining in People with Stable Chronic Obstructive Pulmonary Disease. This study indicate Pursed-lip breathing slows the respiratory rate, and evidence suggests that this decreases the resistive pressure drop across the airways and, therefore, decreases airway narrowing during expiration. This decrease in airway narrowing may account for the decreased dyspnea some people experience when using this technique. Diaphragmatic breathing has negative and positive effects, but the latter appear to be caused by simply slowing the respiratory rate. The Evidence

supports the use of Pursed Lip Breathing, but not Diaphragmatic Breathing, for improving the breathing of people with Chronic Obstructive Pulmonary Disease.

CHAPTER III

METHODOLOGY

Research methodology is a research designed to develop or redefine methods of obtaining organizing or analyzing data principle. (**Polit, 2011**)

This chapter deals with the description of methodology and different steps which were undertaken for gathering and organizing data for the investigation. It includes research approach, research design, setting, samples, and sampling technique, development of teaching strategies, ethical considerations, pilot study, data collection and plan for data analysis.

RESEARCH APPROACH

Quantitative research approach was adopted for the study.

RESEARCH DESIGN

The overall plan for addressing a research question, including specifications for enhancing the study integrity. (**Polit**, **2012**)

The research design adopted for this study was quasi experimental pretest and post testdesign .

Group	**Pre-test**	**Intervention**	**Post-test**
Experimental group	E_1	X	E_2
Control group	C_1	_	C_2

Table :1. Schematic representation of research design

KEY

E_1 : Pre-Test Assessment Of Dyspnea Among Patients With Chronic Obstructive PulmonaryDisease In Experimental Group.

E_2 : Post –Test Assessment Of Dyspnea Among Patients With Chronic Obstructive Pulmonary Disease In Experimental Group.

X : Intervention (Purse-Lip Breathing Exercise)

C_1 : Pre -Test Assessment Of Dyspnea Among Patients With Chronic Obstructive Pulmonary Disease In Control Group.

C_2 : Post- Test Assessment Of Dyspnea Among Patients With Chronic Obstructive Pulmonary Disease In Control Group.

In this study, the pre test level of dyspnea was measured by using DYSNEA ASSESSMENT SCALE for both experimental and control group, followed by implementation of pursed-lip breathing exercise for the clients in experimental group and routine measures for clients in control group. The post test level of dyspnea was measured for both groups by using same DYSPNEA ASSESSMENT SCALE.

SETTINGS OF THE STUDY

"The physical location and condition in which data collection takes place in the study". (**Polit, 2012**).

Setting refers to the place where study was conducted. The study was conducted among chronic obstructive pulmonary disease patients in Government Hospital Thuckalay.

VARIABLES

(Polit and Hungler, 2004) defined an attribute of a person or object that varies, that is, takes on different values.

Dependent Variable

(Polit and Hungler, 2004) defined dependent variables as "The variable hypothesized to depend on or be caused by another variable (the independent variable) the outcome variable of interest".

The present study dependent variable was chronic obstructive pulmonary disease.

Independent variable

(Polit and Hungler, 2004) defined independent variable as "The variable that is believed to cause or influence the dependent variable; in experimental research, the manipulated (treatment) variable".

The present study independent variable is pursed lip breathing exercise.

Extraneous variables

(Polit and Hungler, 2004) defined extraneous variables as "A variable that confounds the relationship between the independent and dependent variables and that needs to be controlled either in the research design or through statistical procedures".

The present study extraneous variables were Age, Gender, Occupation, Area of living, Food Pattern, Type of Activities, Habits, Duration of Illness.

POPULATION

According to **(Polit and Hungler, 2005)** "A population is the entire aggregation of cases in which a researcher is interested".

The population of the study were the chronic obstructive pulmonary disease patients from age group from 41 to 60 years from the selected hospital in Kanyakumari district.

Target population

Target population for this study was the patients of chronic obstructive pulmonary disease at Government hospital, Thuckalay.

Accessible population

Accessible population for this study was the clients above 41 years of age and below 60 years diagnosed as chronic obstructive pulmonary disease in Government Hospital, Thuckalay.

SAMPLING

Sample

Chronic Obstructive Pulmonary Disease patients age group between 41 to 60 years were the samples of study.

Sample size

Sample size is the total number of study participants participating in a study **(Polit 2008).**

The sample size was 60. Among them, 30 samples were in the experimental group and 30 samples were in the control group.

Sampling technique

The sampling technique adopted by the investigator was purposive sampling.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria

- Age between 41-60 years of both gender.
- Those who are willing to participate.
- Patient's with Chronic Obstructive Pulmonary Disease who are admitted in selected hospitals of Kanyakumari district.
- Patient who understands Tamil.

Exclusion criteria

- Those who are seriously ill during the data collection period.
- Patient who were undergone surgeries.
- Who were not willing to participate.

DATA COLLECTION TOOL

A research tool is an instrument used to collect the data. A well prepared research tool enhances the researcher to proceed with the data collection effectively so that the findings will be accurate.

DESCRIPTION OF THE TOOL

The tool was developed after the extensive review of literature, internet search and experts advice. It was decided that the dyspnea assessment scale could be an appropriate tool to assess the dyspnea among chronic obstructive pulmonary disease.

FORMAT OF THE TOOL

The tool for data collection consist of two parts.

Part A

This section consists of demographic variables to collect information regarding age, sex, occupation, area of living, food pattern, type of activities, habits, duration of illness.

Part B: Dyspnea assessment scale

The dyspnea assessment scale consists of score from 1 to 10 for the subjective assessment of dyspnea among chronic obstructive pulmonary disease patient. The scoring is:

Score

- 1-3 - Mild dyspnea
- 4-7 - Moderate dyspnea
- 8-10 - Severe dyspnea

VALIDITY

Data collection tool was given to 5experts for content validity. 4 nursing experts and on medical expert. The experts were requested to check for the relevance, sequence and adequacy of the content in the tool. Modifications and necessary corrections were made.

RELIABILITY

According to **(Denise F. Polit 2011)** Reliability is defined as, "The degree of consistency or dependability with which an instrument measures an attribute".

The reliability was assessed by using test retest method r = 0.9 hence it was highly reliable and the tool was used in this study.

PILOT STUDY

According to the **(Denise F.polit 2011)** pilot study is designed as small scale version are trail run done in preparation of major study.

The pilot study was done after obtaining formal approval from Global college of nursing and government hospital, kuzhithurai by explaining objectives and data collection procedure. The researcher introduced herself to study subjects and established good rapport. Six patients were selected for pilot study. 3 patients for experimental group and 3 patients for control group. First day pre test was done for control and experimental group by using DYSPNEA ASSESSMENT SCALE, next three days intervention was given for experimental group. On fifth day post test was conducted to the control and experimental group by using DYSPNEA ASSESSMENT SCALE. The analysis of the data was done in mean, standard deviation and students paired 't test.

DATA COLLECTION PROCEDURE

The main study was conducted at government hospital, Thuckalay. Before conducting the study formal permission was obtained from the global college and government hospital, Thuckalay. The data collection was from 29-9-2015 to 29-10-2015.Introduction about investigator given to the samples. Based on inclusion criteria 30 samples were collected for both experimental and control group. Samples collected through purposive sampling technique. Pre test was conducted for both experimental and control group. Pursed lip breathing exercise explained to experimental group. Post-test was conducted by using the DYSPNEA ASSESSMENT SCALE for both experimental and control group.

PLAN FOR DATA ANALYSIS

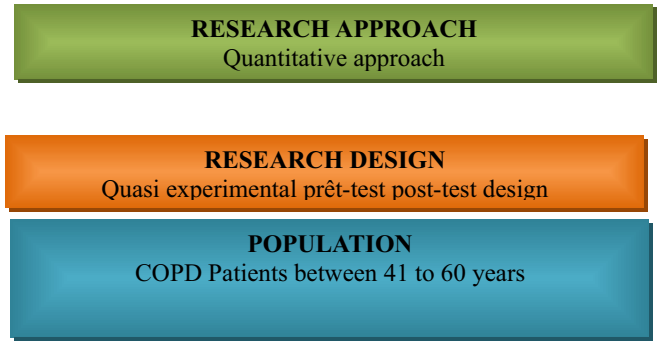
Both descriptive and inferential statistics were used to analyze the data.

Descriptive statistics

1. Frequency and percentage distribution was used to analyze the demographic variables.
2. Frequency and percentage distribution was used to evaluate the level of dyspnea.
3. Mean and standard deviation was used to evaluate the effectiveness of pursed-lip breathing exercise in the level of dyspnea among chronic obstructive pulmonary disease patients.

Inferential statistics

1. Paired 't' test was used to compare the pre-test and post-test level of dyspnea of experimental group and control group.
2. Chi-square test was used to find out the association of the pre-test level of dyspnea of the experimental and control group with the selected demographic variables.



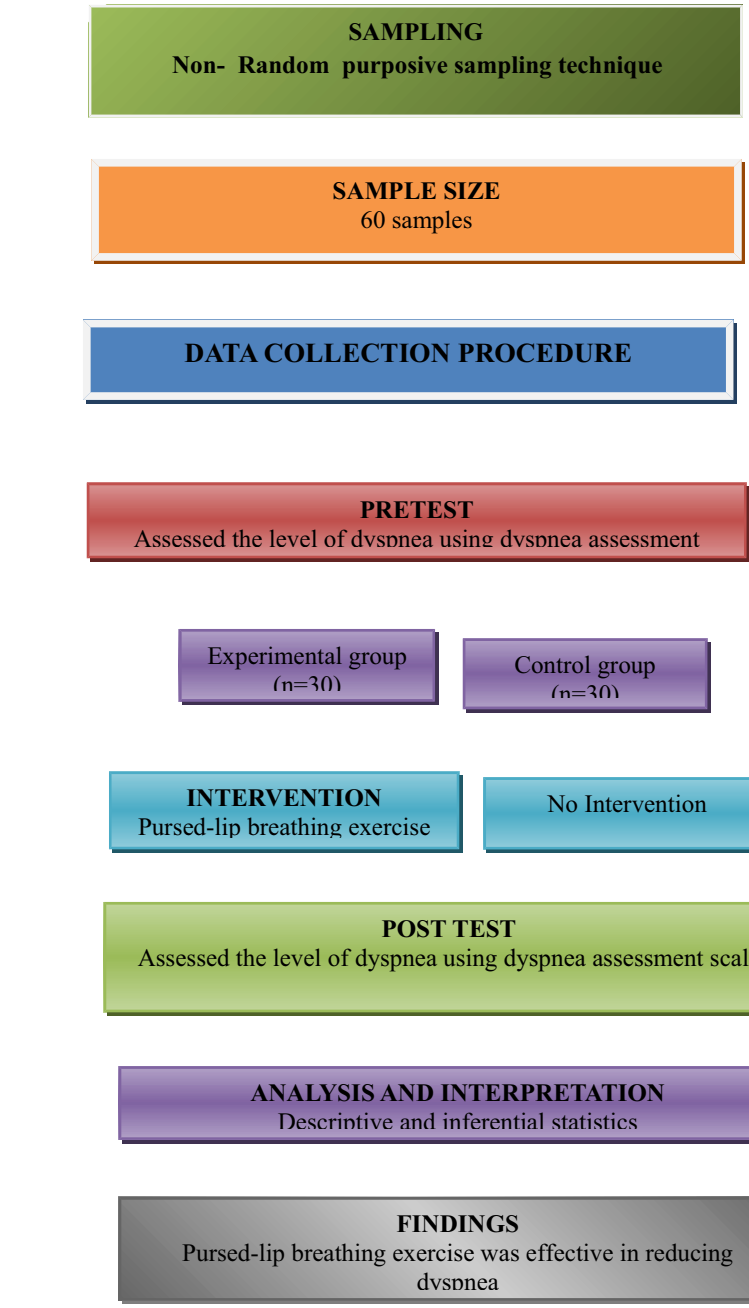


Figure 2: Schematic representation of research methodology

DATA ANALYSIS AND INTERPRETATION

The purpose of analysis was to reduce the data collected in an intelligible and interpretable form, using different statistical methods such as descriptive and inferential statistical analysis.

According to **Polit and Hungler, (2005)** analysis is the method of organizing, sorting and scrutinizing data in such a way that research question can be answered.

In this study deals with the analysis and interpretation of the collected data from 60 chronic obstructive pulmonary disease patients with dyspnea in order to assess the effectiveness of pursed-lip breathing exercise, by assess the pre and post test scores among experimental group and control group .

The analysis and interpretation of data were based on data collection and the results were computed by using descriptive (mean, frequency, percentage distribution and standard deviation) and inferential ('t'-test and chi-square test) statistics and the results were interpreted in tables, figures and diagrams.

The study findings are presented in sections as follows

Section: A

Description of demographic variables of chronic obstructive pulmonary disease patients with dyspnea in experimental group and control group.

Section: B

Assessment of the level of dyspnea among chronic obstructive pulmonary disease patients in both experimental group and control group.

Section: C

- Comparison of pre and post test level of dyspnea among chronic obstructive pulmonary disease in experimental and control group.
- Comparison of post test level of dyspnea among chronic obstructive pulmonary disease patients in experimental and control group.

Section: D

Association between the pre test level of dyspnea among chronic obstructive pulmonary disease patients, with their selected demographic variables in experimental group and control group.

SECTION A

DESCRIPTION OF DEMOGRAPHIC VARIABLES OF CHRONIC OBSTRUCTIVE PULMONARY DISEASEWITH DYSPNEA

Table 4.1: Frequency and percentage distribution of demographic variables in the experimental group and control group.

n=60

Sl. No	Demographic Variables	Experimental Group		Control Group	
		f	%	f	%
1.	Age in years				
	• 41-45 years	3	10	2	6.6
	• 46-50 years	4	13.3	3	10
	• 51-55 years	10	33.3	15	50
	• 56-60years	13	43.3	10	33.3
2.	Gender				
	• Male	23	76.6	12	40
	• Female	7	23.3	18	60
3.	Occupation				
	• Poultry workers	2	6.6	0	0
	• Industrial workers	10	33.3	9	30
	• Coolie workers	13	43.3	11	36.6
	• Professional workers	0	0	0	0
	• No occupation	5	16.6	10	33.3

Sl. No	Demographic Variables	Experimental Group		Control Group	
		f	%	f	%
4.	Area of living				
	• City	0	0	0	0
	• Town	16	53.3	16	53.3
	• village	14	46.6	14	46.6
5.					

Habits				
• Tobacco	0	0	5	16.6
• Smoking	15	50	6	20
• Alcohol	5	16.6	2	6.6
• No bad habits	10	33.3	17	56.6
6. Duration Of Illness				
• recently diagnosed	3	10	0	0
• 1 year	11	36.6	12	40
• 5years	11	36.6	13	43.3
• >5years	5	16.6	5	16.6
7. Food habits				
• Vegetarian	3	10	6	20
• Non vegetarian	27	90	24	80

Table 4.1 shows with regard to the Age in years in experimental group, 3 (10%) were in the age group of 41-45 years, 4 (13.3%) were in the age group of 46-50 years, 10(33.3%) were in the age group of 51-55 years, 13 (43.3%) were in the age group of 56-60 years, where as in the control group, 2 (6.6%) were in the age group of 41-45 years, 3 (10%) were in the age group of 46-50 years,15 (50%) were in the age group of 51-55 years,10 (33.3%) were in the age group of 56-60 years,

With regard to the Gender in the experimental group,23 (76.6%) were males and 7 (23.3%) were female where as in the control group, 12 (40%) were males and 18(60%) were females.

Regarding the Occupation in experimental group 2 (6.6%) were poultry workers, 10(33.3%) were industrial workers ,13(43.3%) were coolie workers ,0 (0%) were professional workers and 5(16.6%) were non workers. In control group 0(0%) were poultry workers, 9(30%) were industrial workers,11(36.6%) were studied coolie workers,0(0%) were studied professional workers and 10(33.3%) were non workers.

Regarding the area of living in experimental group 0(0%) were living in city, 16(53.3%) were living in town, 14(46.6%) were living in village.In control group 0(0%) were living in city, 16(53.3%) were living in town, 14(46.6%) were living in village.

With regard to the type of activities in the experimental group 24(80%) were sedentary workers and 5(16.6%) were moderate workers and 1(3.3%) were heavy worker, where as in the control group 28(93.3%) were sedentary workers, 2(6. 6%) were moderate workers and 0(0%) were heavy worker.

With regard to the habits in experimental group 0 (0%) of them were tobacco chewers, 15(50%) of them were smokers, 5(16.6%) of them werealcoholdrinkers and 10(33.3%) of them have no bad habits. In control group5(16.6%) of them were tobacco chewers,6(20%) of them were smokers, 2(6.6%) of them were alcohol drinkers and 17(56.6%) of them have no bad habits.

With regard to the duration of illness in experimental group 3(10%) were recently diagnosed, 11(36.6%) were diagnosed with in 1 year, 11(36.6%) were diagnosed 5years and 5(16.6%) were diagnosed more than 5 years .In control group 0(0%) were recently diagnosed,12(40%) were diagnosed with in a year, 13(43.3%) were diagnosed 5years and 5(16.6%) were diagnosed more than 5 years.

With regard to food habit in experimental group 3(10%) were vegetarian and 27(90%) were non vegetarian .In control group 6(20%) were vegetarian and 24(80%) were non vegetarians.

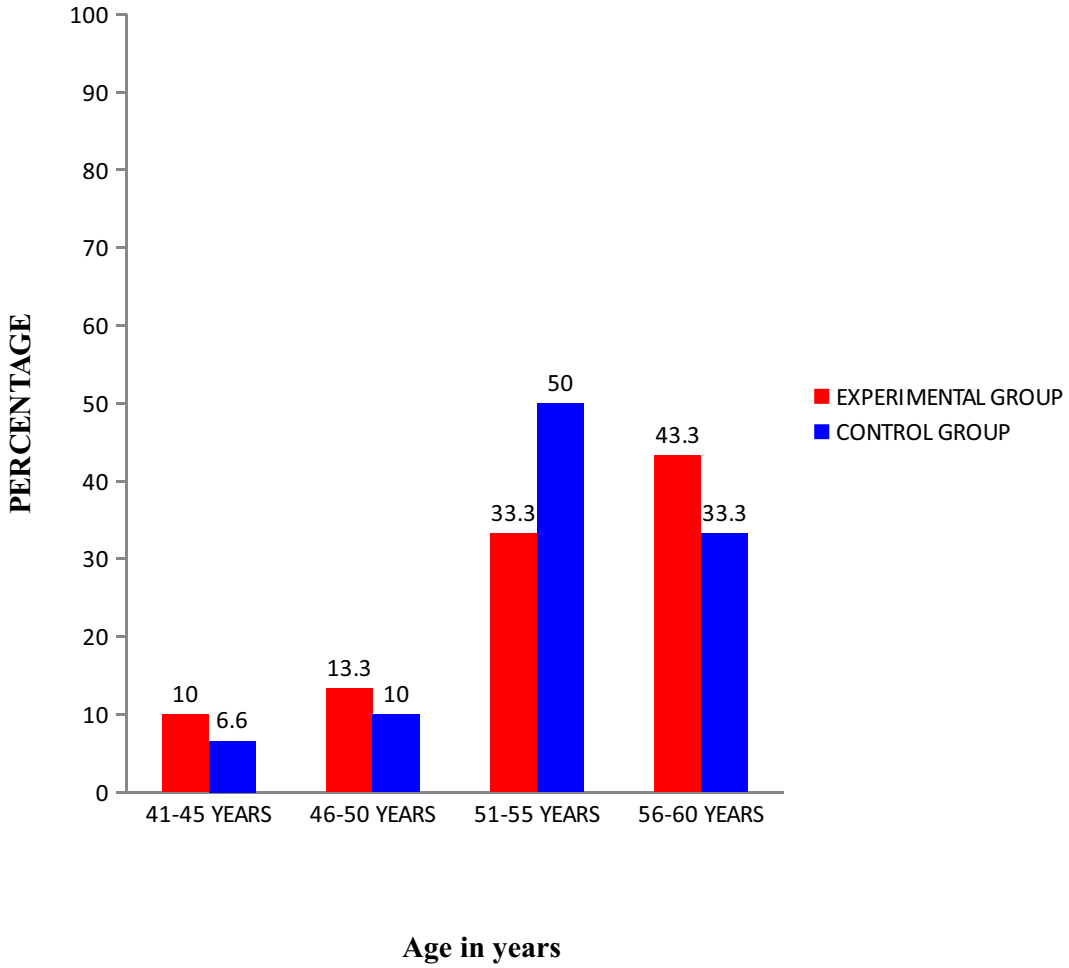


Fig 3: Percentage distribution of samples according to age in years

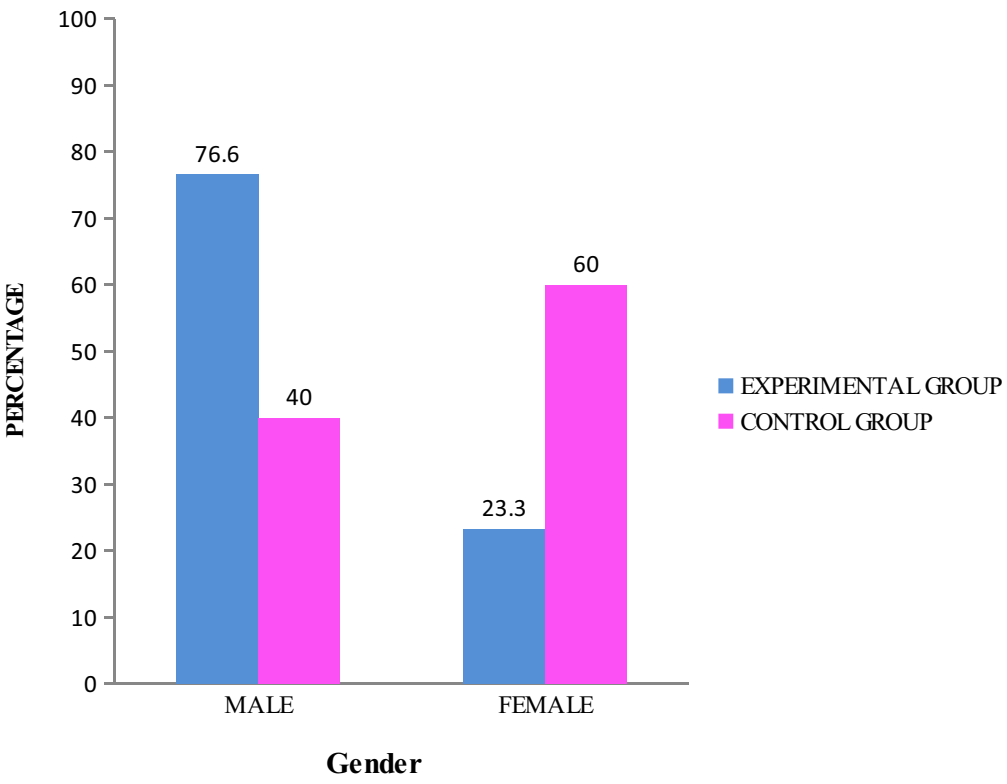


Fig 4: Percentage distribution of samples according to gender

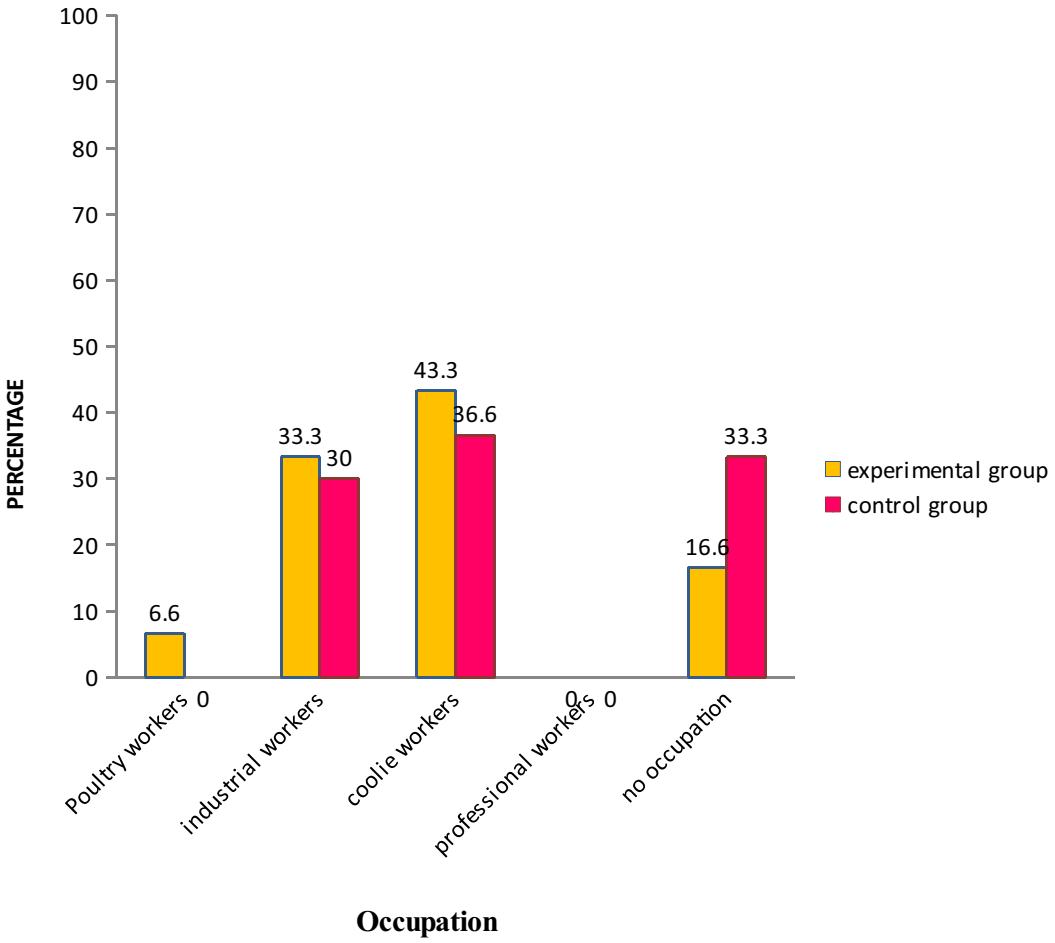


Fig 5: Percentage distribution of samples according to occupation

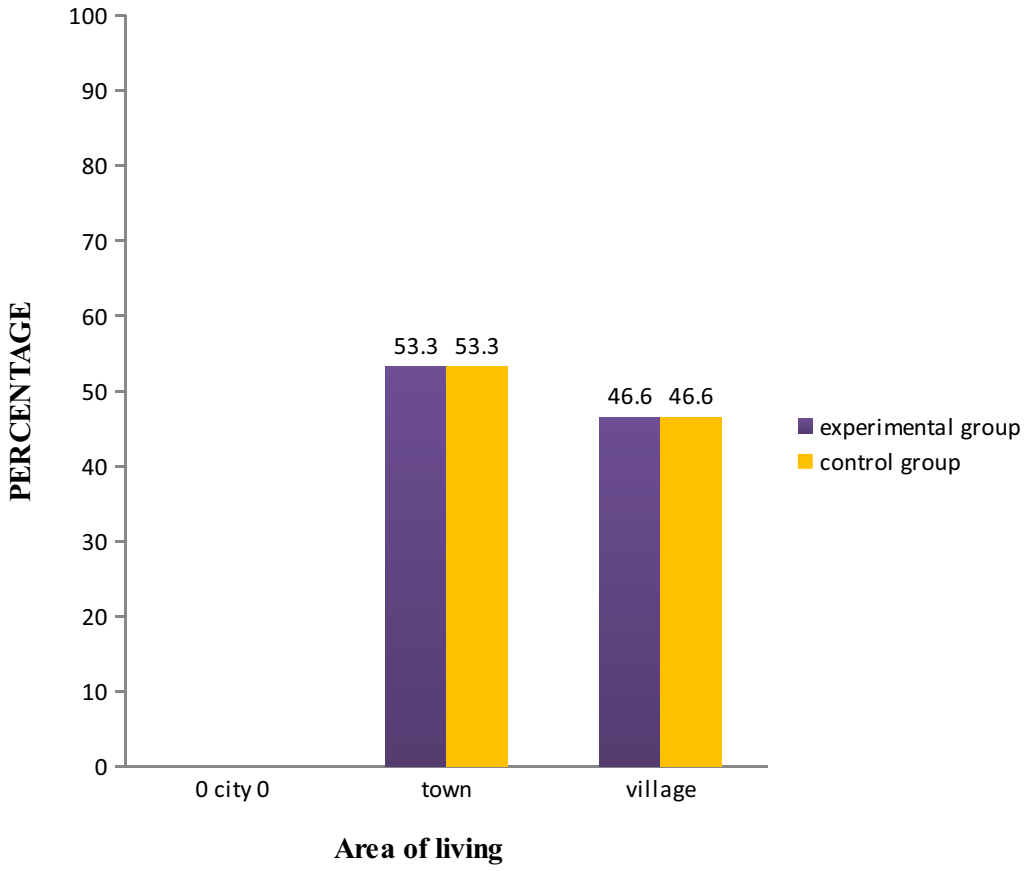


Fig 6: Percentage distribution of samples according to area of living

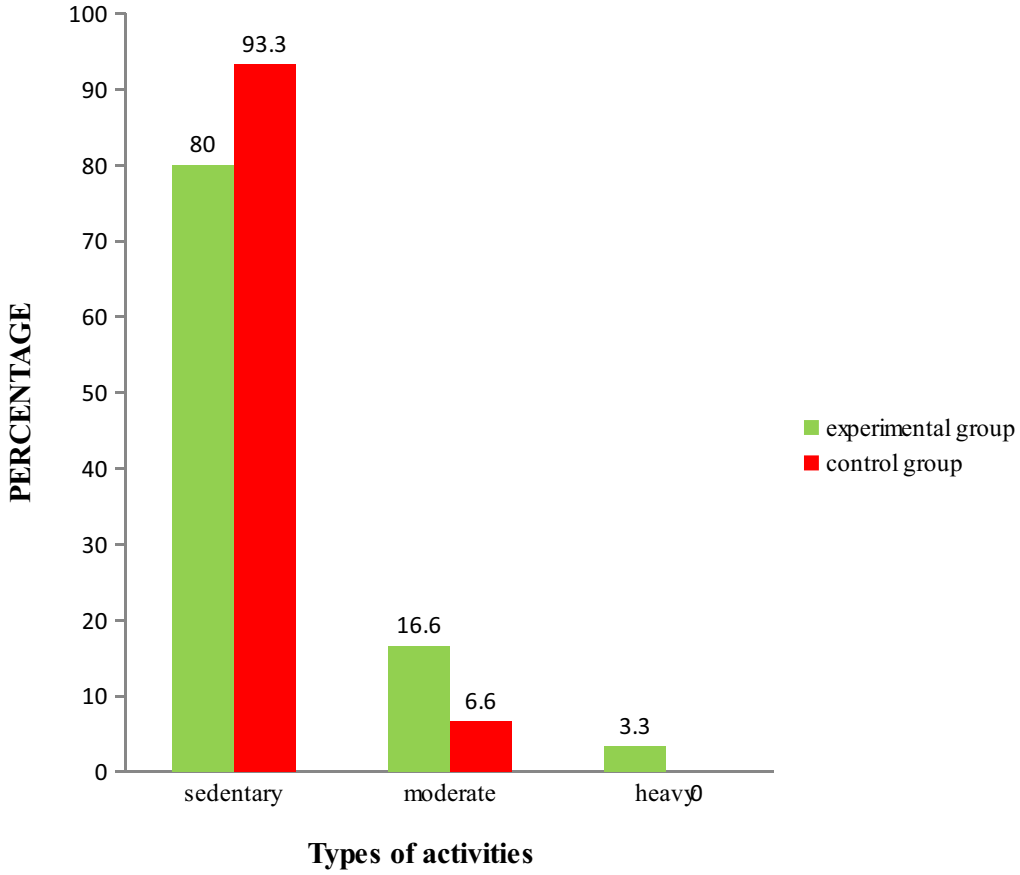


Fig 7: Percentage distribution of samples according to type of activities

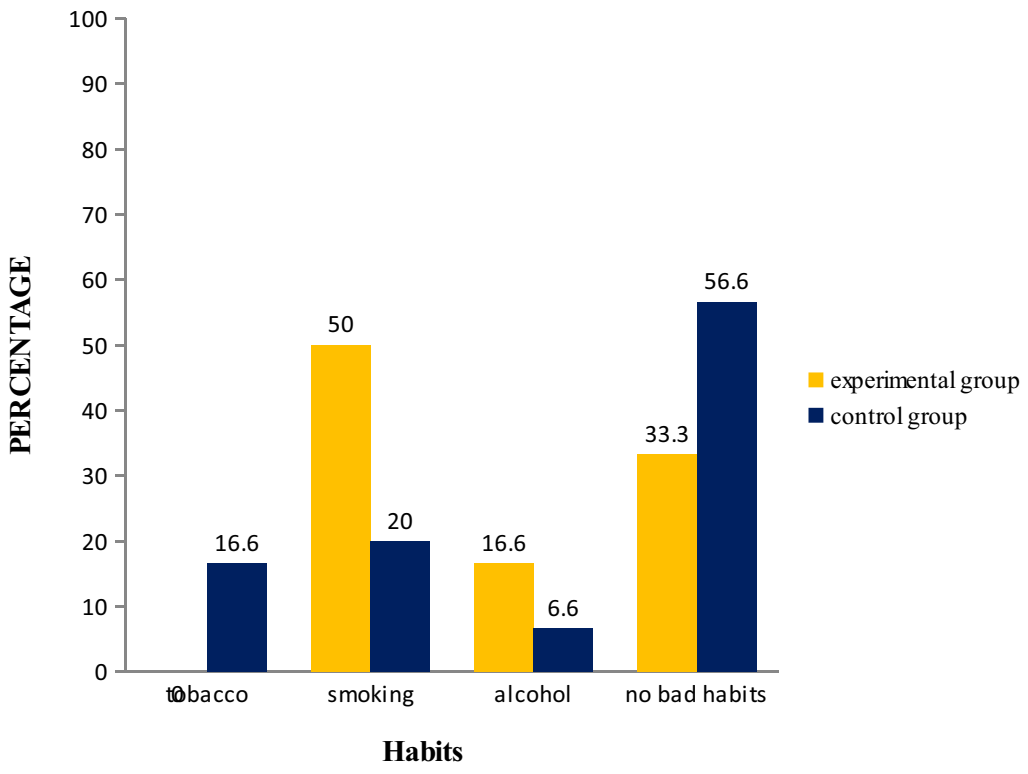


Fig 8: Percentage distribution of samples according to habits

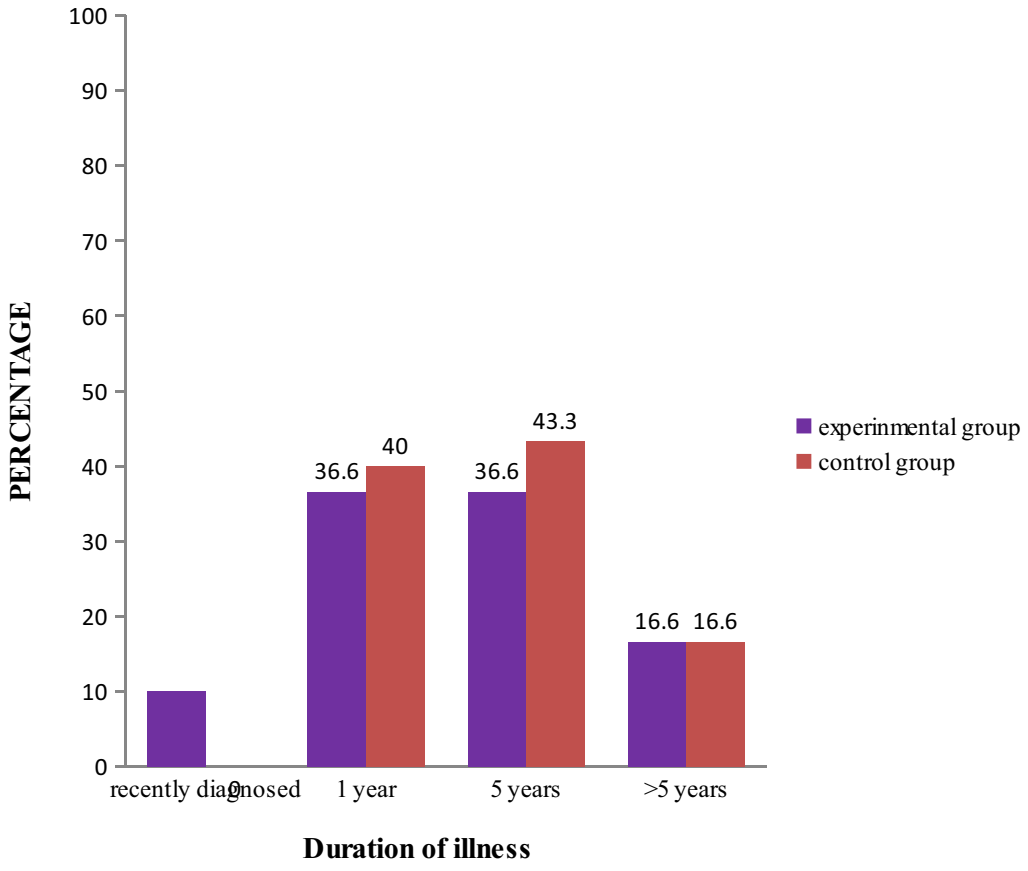


Fig 9: Percentage distribution of samples according to duration of illness

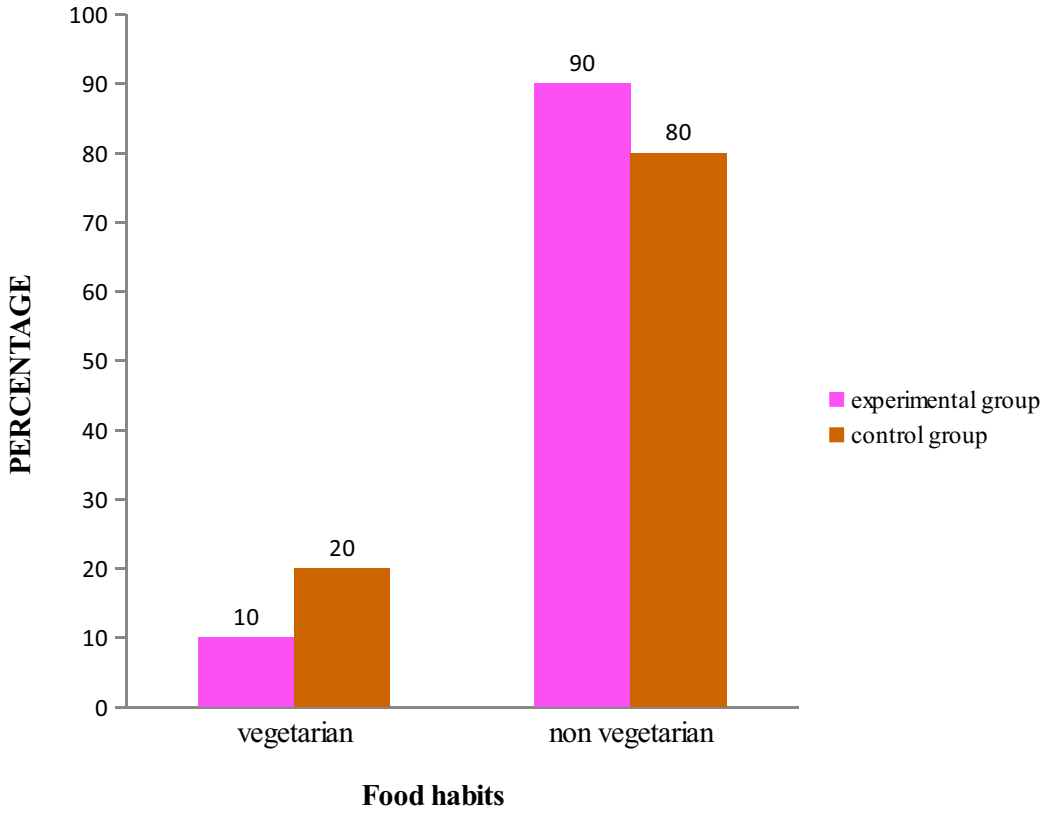


Fig 10: Percentage distribution samples according to food habit

SECTION B

ASSESSMENT OF THE LEVEL OF DYSPNEA AMONG CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS IN BOTH EXPERIMENTAL GROUP AND CONTROL GROUP.

Table 4.2: Frequency, percentage distribution of selected samples as per their level of dyspnea in experimental group.

Sl. No.	Level of Dyspnea	Experimental group			
		Pre test		Post test	
		f	%	f	%
1	Mild	24	80	27	90
2	Moderate	6	20	3	10
3	Severe	0	0	0	0

The above table 4.2 shows the level of dyspnea in the experimental group among chronic obstructive pulmonary disease patients.

Out of 30 subjects in the experimental group, 24 (80%) of them had Mild level of dyspnea, 6 (20%) had Moderate level of dyspnea and 0(0%) had Severe level of dyspnea in their pre-test assessment. Whereas in the post-test , 27 (90%) of them had Mild level of dyspnea, 3(10%) had Moderate level of dyspnea and 0(0%) had Severe level of dyspnea.

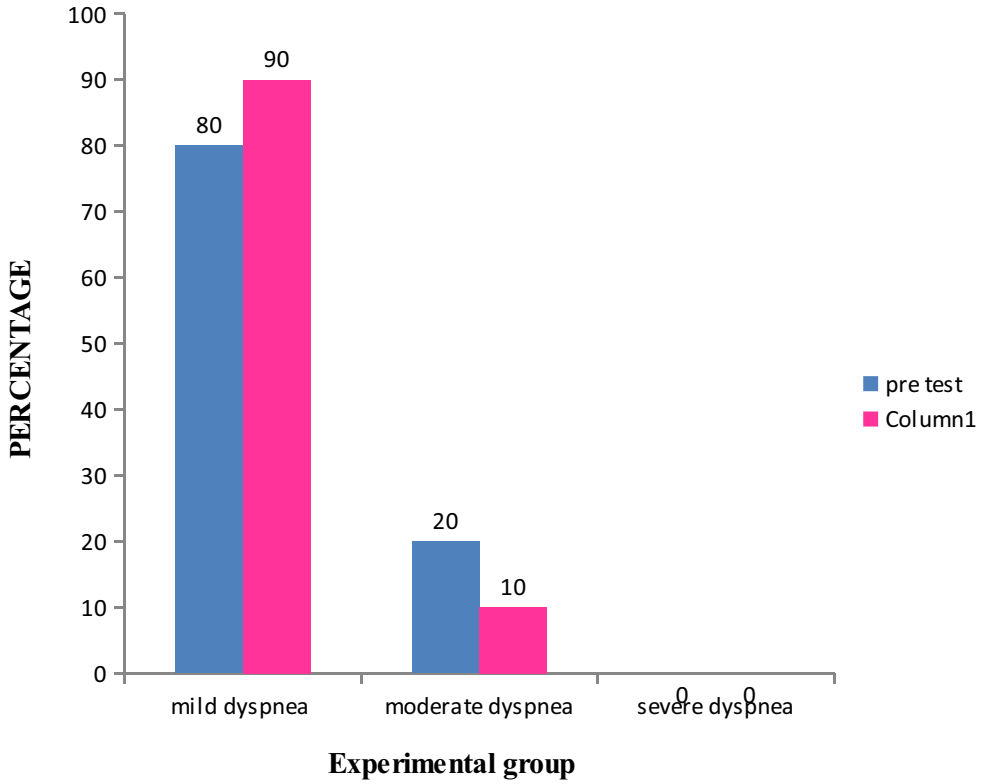


Fig 11: Frequency, percentage distribution of selected Samples as per their level of dyspnea in experimental group.

Table 4.3 : Frequency, percentage distribution of selected samples as per their level of dyspnea in control group

Sl. No.	Level of stress	Control group			
		Pre test		Post test	
		f	%	f	%
1.	Mild	25	83.3	19	63.3
2.	Moderate	5	16.6	11	36.6
3.	Severe	0	0	0	0

The above table 4.3 shows the level of dyspnea in the control group among chronic obstructive pulmonary disease patients.

Out of 30 subjects in the experimental group, 25 (83.3%) of them had Mild level of dyspnea, 5 (16.6%) had Moderate level of dyspnea and 0(0%) had Severe level of dyspnea in their pre-test assessment. Whereas in the post-test 19(63.3%) of them had Mild level of dyspnea, 11(36.6%) had Moderate level of dyspnea and 0(0%) had Severe level of dyspnea.

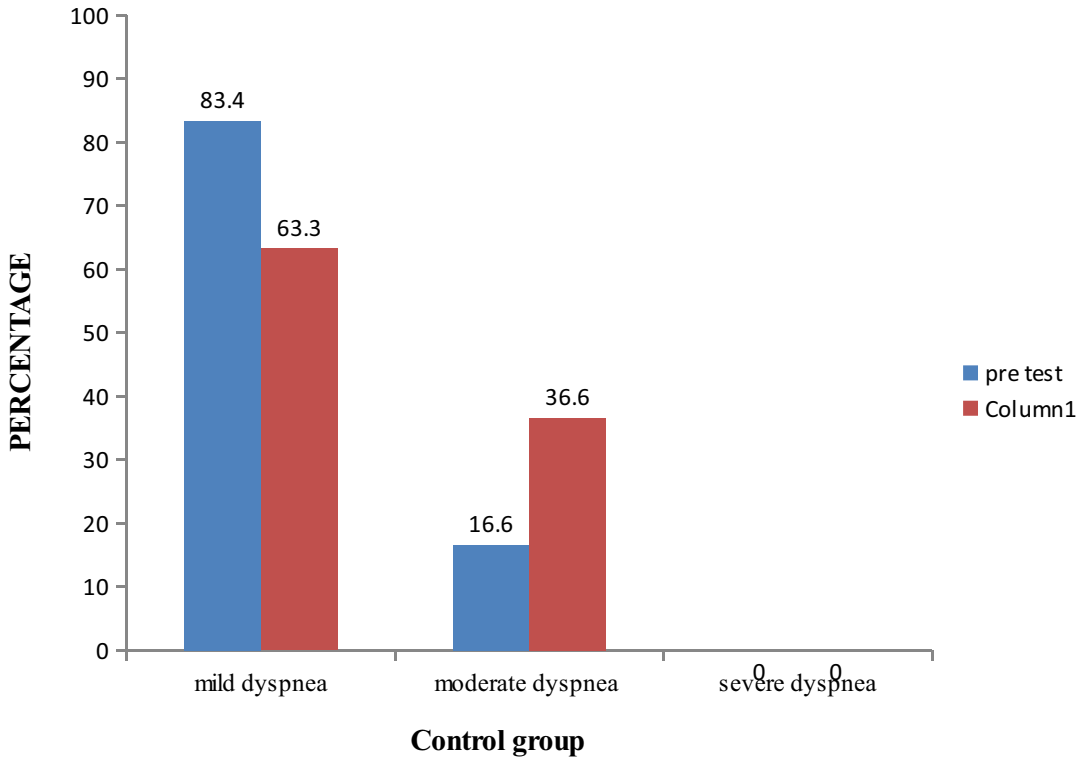


Fig 12 Frequency, percentage distribution of selected samples as per their level of dyspnea in control Group

Table 4.4 : Comparison of pre and post test level of dyspnea among chronic obstructive pulmonary disease patients in experimental group

Sl no	Experimental Group	Mean	SD	MD	't' value
1	Pre test	2.7	0.7		
				1.1	13.78*
2	Post test	1.6	0.4		

***-significant at p>0.05 level**

Table 4.4 reveals that among experimental group the mean pre-test score was 2.7 with standard deviation with 0.7. The mean post-test was 1.6 with standard deviation 0.4. The mean difference was 1.1. The obtained 't' value was 13.78, where as the table value was 2.04. It was significant at p>0.05 level.

It was inferred that pursed-lip breathing exercise was highly effective in reducing of dyspnea among chronic obstructive pulmonary disease patients.

Table 4.5: Comparison of pre and post test level of dyspnea among chronic obstructive pulmonary disease patientsin control group

Sl no	Control Group	Mean	SD	MD	't' value
1	Pre test	2.9	0.9		
				0.4	7.42*
2	Post test	3.3	0.6		

***-significant at p>0.05 level**

Table 4.5 reveals that among control group the mean pre-test score was 2.9 with standard deviation with 0.9. The mean post-test was 3.3 with standard deviation 0.6. The mean difference was 0.4. The obtained 't' value was 7.42, where as the table value was 2.04. It was significant at p>0.05 level.

Table 4.6: Comparison of post test level of dyspnea among chronic obstructive pulmonary disease patientsin experimental group and control group

Sl no.	Group	Mean	SD	MD	't' value
1	Experimental group (post test)	1.6	5.88	1.7	4.25*
2	Control group (post test)	3.3	14.3		

*- significant at p>0.05 level

Table 4.6 reveals that among experimental group the mean post test score was 1.6 with standard deviation with 5.88. In the control group the mean post test was 3.3, with standard deviation 14.3. The mean difference was 1.7. The obtained't' value was 4.25, and the table value was (1.6), which was significant at p>0.05 level.

It was inferred that pursed lip breathing exercise is effective in reducing dyspnea among chronic obstructive pulmonary disease patients**.**

SECTION IV

Table :4.7: Association value of pre test level of dypsnea with subjects in experimental and control group

		n=30	n=30
S.	**Demographic Variables**	**Experimental Group**	**Control Group**

No		F	%	Df	X^2	T	F	%	Df	X^2	T
1	Age in years										
	a) 41-45 years	3	10				2	6.6			
	b) 46-50 years c) 51-55 years	4	13.3	3	5.75	7.82	3	10	3	1.18	7.82
	d) 56-60 years	10	33.3				15	50			
		13	43.3				10	33.3			
2	Gender										
	a) Male	23	76.6	1	0.399	3.81	12	40	1	41.9	3.81
	b) Female	7	23.3				18	60			
3	occupation										
	a) Poultry workers	2	6.6				0	0			
	b) Industrial workers										
	c) Coolie workers	10	33.3				9	30			
	d) Professional workers										
	e) No occupation	13	43.3	4	1.967	9.49	11	36.6	4	0.528	9.49
		0	0				0	0			
		5	16.6				10	33.3			

S. No	Demographic Variables	Experimental Group					Control Group				
		F	%	Df	X^2	T	F	%	Df	X^2	T
4	Area of living										
	a) City	0	0				0	0			
	b) Town c) Village	16	53.3	2	0.04	5.99	16	53.3	2	1.711	5.99
		14	46.6				14	46.6			
5	Types of activities										
	a) Sedentary workers	24	80				28	93.3			

	b) Moderate workers	5	16.6	2	0.68	5.99	2	6.6	2	0.426	5.99
	c) Heavy workers	1	3.3				0	0			
6	Habits										
	a) Tobacco	0	0				5	16.6			
	b) Smoking										
	c) Alcohol	15	50				6	20			
	d) No bad habits	5	16.6	3	5.17	7.82	2	6.6	3	2.71	7.82
		10	33.3				17	56.6			

S. No	Demographic Variables	Experimental Group					Control Group				
		F	%	Df	χ^2	T	F	%	Df	χ^2	T
7	Duration of illness										
	a) Recently diagnosed	3	10				0	0			
	b) 1 year										
	c) 5 years	11	36.6	3	1.952	7.82	12	40	3	0.337	7.82
	d) >5 years	11	36.6				13	43.3			
		5	16.6				5	16.6			

8	Food habits											
	a) Vegetarian	3	10				6	20				
	b) Non-vegetarian			1	0.356	3.81			1	1.5	3.81	
		27	90				24	80				

Table 4.7.It reveals that, there is no significant association ($p<0.05$) between the dyspnea and demographic variables of chronic obstructive pulmonary disease patients in experimental and control group. Hence the research hypothesis H_3 rejected.

Summary

This chapter dealt with data analysis and interpretation in the form of statistical value based on objectives, 't' test was used to evaluate the effectiveness of pursed-lip breathing exercise on dyspnea. The chi-square test was used to find out the association between the dyspnea with their demographic variables in experimental and control group.

CHAPTER V

DISCUSSION

The main aim of the study was to assess the effectiveness of pursed-lip breathing exercise in reducing dyspnea among chronic obstructive pulmonary disease patients. The study was conducted by using quasi experimental pre and post test control group design. The present study was conducted in Government hospital Thuckalay, Kanyakumari district. The sampling technique is tossing coin sampling technique head and tail was used for this study. The total sample size was 60, among them 30 were in the experimental group and 30 were in the control group. Dyspnea assessment scale was for data collection. After data collection, was organized,

tabulated, summarized and analyzed. The study findings were discussed in this chapter with reference to the objectives of the study.

Objectives

- To assess the pre-test and post-test level of dyspnea for patients with chronic obstructive pulmonary disease in experimental group.
- To assess the pre-test and post-test level of dyspnea for patients with chronic obstructive pulmonary disease in control group.
- To evaluate the effectiveness of pursed-lip breathing exercise on dyspnea among chronic obstructive pulmonary disease patients in experimental group and control group.
- To associate pre-test level of dyspnea for patients with chronic obstructive pulmonary disease of the experimental and control group with their selected demographic variables

The first objective of this study was to assess the pre-test and post-test level of dyspnea for patients with chronic obstructive pulmonary disease in experimental group.

Out of 30 subjects in the experimental group, 24 (80%) of them had Mild level of dyspnea, 6 (20%) had Moderate level of dyspnea and 0(0%) had Severe level of dyspnea in their pre-test assessment. Whereas in the post-test 27 (90%) of them had Mild level of dyspnea, 3(10%) had Moderate level of dyspnea and 0(0%) had Severe level of dyspnea.

S. E. Roberts (2009) Conducted a study on the use of pursed lips breathing in chronic obstructive pulmonary disease. The study reveals that the direction of effect for PLB was consistently towards benefit, the evidence demonstrates that in COPD pursed lips breathing increases oxygen saturation and tidal volume, reduces

respiratory rate at rest and reduces time taken to recover to pre-exercise breathlessness levels.

The second objective of this study was to assess the pre-test and post test level of dyspnea among control group.

Out of 30 subjects in the control group, 25 (83.4%) of them had Mild level of dyspnea, 5 (16.6%) had Moderate level of dyspnea and 0(0%) had Severe level of dyspnea in their pre-test assessment. Whereas in the post-test 19 (63.4%) of them had Mild level of dyspnea, 11(36.6%) had Moderate level of dyspnea and 0(0%) had Severe level of dyspnea.

Gail Dechmanetal [2000] conducted a study on Evidence Underlying pursed-lip Breathing training in People with Stable Chronic Obstructive Pulmonary Disease. This study indicate that in our review of the literature used either PLB or DB in isolation, contained a clear description of the methods, and used outcomes that were measured with what we considered to be appropriate procedures. Pursed-lip breathing slows the respiratory rate, and evidence suggests that this decreases the resistive pressure drop across the airways and, therefore, decreases airway narrowing during expiration. This decrease in airway narrowing may account for the decreased dyspnea some people experience when using this technique. Diaphragmatic breathing has negative and positive effects, but the latter appear to be caused by simply slowing the respiratory rate. Evidence supports the use of PLB, but not DB, for improving the breathing of people with COPD.

The third objective of this study was to evaluate the effectiveness of pursed –lip breathing exercise by comparing the post test level of control group and experimental group.

In experimental group the mean post test score was 1.6 with standard deviation with 5.88. In the control group the mean post test was 3.3, with standard deviation 14.3. The mean difference was 1.7. The obtained 't' value was 4.25, and the table value was (1.6), which was significant at p>0.05 level.

It was inferred that pursed lip breathing exercise is effective in reducing dyspnea among chronic obstructive pulmonary disease patients**.**

Fateme S Izadi-Avanji [2011] conducted a study on effects of pursed lip breathing on Dyspnea and activities of daily living in patients with COPD. This reveals indicate that O2sat was significantly increased (P<0.05) and a tendency toward an increase in PaO2 was observed after three weeks of exercise. In addition, a decrease in PaCO2 (P<0.05) and the respiratory rate (P<0.001) was observed. Breathing was also increased (P<0.001) was observed.

The fourth objective to determine the association of pretest level of dyspnea with their selected demographic variables

There is no significant association p<(0.05) between the level of dyspnea and demographic variables. It reveals that, there is no significant association (p<0.05) between the dyspnea and demographic variables of chronic obstructive pulmonary disease patient in experimental and control group. Hence the research hypothesis H_3 rejected.

CHAPTER VI

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter deals with summary, conclusion, limitation and recommendation of the study. Further it includes implications for the Nursing Practice, Nursing Education, Nursing Administration and Nursing Research.

Summary of the Study

The aim of a study to evaluate the effectiveness of pursed- lip breathing exercise in reduction of dyspnea among chronic obstructive pulmonary disease patients in selected hospitals of Kanyakumari district.

- To assess the pre test and post test level of dyspnea for patients with Chronic obstructive pulmonary disease in experimental group.

- To assess the pre test and post test level of dyspnea among Chronic obstructive pulmonary disease in control group.
- To evaluate the effectiveness of pursed lip breathing exercise on dyspnea among Chronic obstructive pulmonary disease in experimental group and control group.
- To associate the pretest level of dyspnea with Chronic obstructive pulmonary disease of the experimental and control group with their selected demographic variables. .

A quasi experimental pre-post test control group design was chosen for this study. Purposive sampling technique was used for this study. Subjects were selected based upon the inclusion and exclusion criteria. 60 subjects were selected for the study. 30 Subjects were assigned to the experimental group and 30 subjects were assigned to the control group .

The tool used to collect the data consisted of two parts,

Part I: Consist of demographic Variables with age, gender, occupation, area of living, food pattern, type of activities, habits, duration of illness.

Part II: Consist of Dyspnea Assessment Scale to assess the level of dyspnea among chronic obstructive pulmonary disease patients.

Reliability of the tool was calculated by using test-retest method(r =0.9). Data collection was done for 4 weeks. Samples were selected based on the inclusion and exclusion criteria. Pre test was done by using demographic variables and dyspnea assessment scale.

After the pursed-lip breathing exercise post test was done. Collected data was analyzed by both descriptive statistics (mean, standard deviation, frequency and percentage) and inferential statistics ('t' test, chi-square) and results were calculated.

Major Findings of the Study

Among experimental group the mean pre-test score was 2.7 with standard deviation with 0.7. The mean post-test was 1.6 with standard deviation 0.4. The mean difference was 1.1. The obtained 't' value was 13.78, where as the table value was 2.04. It was significant at $p > 0.05$ level.

It reveals that among control group the mean pre-test score was 2.9 with standard deviation with 0.9. The mean post-test was 3.3 with standard deviation 0.6. The mean difference was 0.4. The obtained 't' value was 7.42, where as the table value was 2.04. It was significant at $p > 0.05$ level.

With regard to the association between the level of dyspnea and selected demographic variables in experimental group and control group.

Conclusion

The main conclusion of the present study is pursed-lip breathing exercise is effective in reducing dyspnea among chronic obstructive pulmonary disease patients which is denoted by significant level of dyspnea. After the intervention there had been a significant reduction in level of dyspnea. The selected subjects became familiar and found themselves comfortable and also expressed satisfaction.

Implication of the Study

Nursing implication includes specific information for Nursing practice, Nursing Education, Nursing Administration and Nursing research. Nursing implication for this study is

Nursing practice

- Pursed-lip breathing exercise can be introduced as a stimulating mode of intervention by the nurses for promoting comfortable breathing among the patients suffering from chronic obstructive pulmonary disease.
- Pursed-lip breathing exercise can be incorporated into routine nursing intervention.
- Pursed-lip breathing can be given for patients admitted in medical ward. This therapy will help to reduce dyspnea.

Nursing education

It is important to have educational programme on pursed-lip breathing exercise for all nursing students, so that they can apply this technique to reduce the dyspnea experienced by the inpatients in the hospital.

- Nurse educator can encourage students to conduct health teaching sessions on various relaxation methods.
- Staff development programme need to be arranged, so that the nurse educators can encourage the students to provide relaxation therapies to the patients.

Nursing administration

- Nursing administrator can organize in-service education programmes for staff nurses regarding pursed-lip breathing exercise.

- ❖ Nurse administrator can make arrangements for the practice of pursed-lip breathing exercise in hospital, so that the staff nurses can provide calm, quiet, clean and safe environment to the patients for the practice.

Nursing research

- ❖ Researchers should focus on other non-pharmacological interventions like diaphragmatic exercise, spirometry to reduce dyspnea.
- ❖ The findings should be disseminated through conferences, seminars and publications in professional, national and international journals.

Recommendations

Recommendations include:

1. A similar study could be conducted with dyspnea for chronic obstructive pulmonary disease patients to find out the effectiveness of the pursed-lip breathing exercise.
2. A comparative study can be conducted to find out the difference in level of dyspnea.
3. A study can be conducted with large sample size to generalize the results of the study.
4. Research can be conducted to find out the various innovative methods to reduce the level of dyspnea.

5. Research can be done on various populations at various settings.

6. Research can be done to compare the level of dyspnea in chronic obstructive pulmonary disease patients and those who suffer from other serious medical illnesses.

Conclusion

The conclusion drawn from the findings of the study are as follows;

i. Pursed lip breathing exercise found to be an effective nursing intervention in reducing dyspnea among chronic obstructive pulmonary disease patients.

ii. Pursed lip breathing exercise is found to have no side effects when compared with pharmacological treatments.

iii. The findings of the study enlighten the fact that pursed lip breathing exercise can be used as a cost effective nursing intervention in reducing dyspnea among chronic obstructive pulmonary disease patients.

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APPENDIX - I

Tel. (O) : 273297
270753

GLOBAL COLLEGE OF NURSING

Recognised by the TNC & INC
Affliated to Tamil Nadu Dr. M.G.R. Medical University
Edaivilagam, Nattalam, Kanyakumari District.

Off: S.G. Multi Speciality Hospital, Old Theatre Jn, Pammam, Marthandam - 629 165, K.K. Dist., Tamil Nadu. Mob : 9443606955, 9944110448.

To

The Medical Superintendent,
Government hospital,
Padmanabapuram,
Thuckalay,
K.K.Dist.

Sir,

Sub: Permission seeking letter for the conduct of research – reg.

This is to request you to kindly permit Ms. J. Glory joy, II year M.Sc. (N), Global College of Nursing to conduct her study.

STATEMENT OF THE STUDY:

"A STUDY TO EVALUATE THE EFFECTIVENESS OF PURSED-LIP BREATHING EXERCISE IN REDUCTION OF DYSPNEA AMONG CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS IN SELECTED HOSPITALS OF KANYAKUMARI DISTRICT"

So, kindly consider this letter and do the needful.

Thanking you,

Yours,

Principal
GLOBAL COLLEGE OF NURSING
Edavilagam, Nattalam,
Kanyakumari District - 629 165

Dr. P. JANET,
Reg. No: 56850
Senior Civil Surgeon
Govt. Head Quarters Hospital
Padmanabhapuram

GLOBAL COLLEGE OF NURSING
NATTALAM, K.K. DIST.

APPENDIX-II

PARADISE YOGA AND NATUROPATHY HOSPITAL

Nanthavanam, Poonthoppu, Kannanoor P.O., K.K.Dist., TamilNadu., Pin : 629 158
Ph : 04651 - 276211, Cell : 9443462137
E-mail : drsugin@yahoo.co.in, info@drsuginparadise.com; Website : www.drsuginparadise.com

Ref.No : 69/CER/2015 Date : 4-6-2015

CERTIFICATE

This is to certify that Miss. J. GLORY JOY, 2nd year M.sc, Nursing student of Global College of Nursing, Nattalam, Kanyakumari Dist, had under gone one month training program on Breathing Exercises, under my guidance. She is fit to treat Chronic Obstructive Pulmonary Disease patients with pursed lip breathing Exercise.

4/6/15.

Dr. R.S. SUGIN HERBERT, BNYS., Ph.D., (Psy)
Reg. No.: 0354

PARADISE YOGA AND NATUROPATHY HOSPITAL
Nanthavanam, Poonthoppu, Kannanoor P.O.,
Kanyakumari Dt. - 629 158

APPENDIX -III

APPENDIX-II

LETTER SEEKING EXPERTS OPINION FOR VALIDITY OF TOOL

From

J. Glory Joy
M.sc. (Nursing) II Year,
Global college of nursing,
Nattalam.

To

Respected sir/madam,

I am doing II year M.Sc. (Nursing) in Global College Of Nursing, Nattalam. As a partial fulfillment of the course I have chosen a topic of my interest "**A study to evaluate the effectiveness of pursed lip breathing exercise in reduction of Dyspnea among chronic obstructive pulmonary disease patients in selected hospitals of Kanyakumari district**". I have prepared demographic data and standardized tool. I hereby kindly request you to evaluate the tool based on the evaluation criteria. Your opinion and suggestion will help me to the successful completion of my study.

Thanking you

Yours truly,

J. Glory Joy

APPENDIX-IV

EVALUATION CRITERIA CHECK LIST FOR VALIDATION

INTRODUCTION

The expert is requested to go through the following criteria for evaluation.

Three columns are given for responses and a column for remarks. Kindly place tick mark in the appropriate column and give remarks.

Interpretation of column

Column I: Meets the criteria

Column II: Partially meet the criteria

Column III: Does not meet the criteria

Serial No	Criteria	1	2	3	Remarks
1	Scoring -Adequacy -Clarity -Simplicity				
2	Content -Logical sequence - Adequacy -Relevance				
3	Language -Appropriate -Clarity -Simplicity				
4	Practability -It is easy to score Does it precisely Utility				

Signature

Any other suggestion

Name

Designation

Address

APPENDIX -V

LIST OF EXPERTS FOR TOOL VALIDATION

1. **DR. Janet.MD (GM)**

   Government hospital

   Thuckalay

2. **Prof. Sharmila Jansi Rani M.Sc(N).,Phd,**

   Professor

   Christian College of Nursing

   Neyoor.

3. **Mrs. D.Nesalinsuji M.Sc(N)**

   Reader

   CSI College of Nursing

   Marthandam

4. **Mrs.Y. Vinithabai M.Sc (N)**

   Reader

   CSI College of Nursing

   Marthandam

5. **Prof. Mrs.B. Brightrick joliyo M.Sc(N)**

   Assistant professor

   White memorial College of Nursing

   Attoor.

APPENDIX -VI

DATA COLLECTION TOOL

This data collection tool is to assess the effectiveness of pursed lip breathing exercise in reducing dyspnea among COPD government Hospital,Thuckalay,Kanyakumari district. The data will be collected by interview method. The investigator will ask questions to the sample and the response will be marked. The data collected will be kept confidential and will not be used for anyother purpose other than research**.**

SECTION: A

Demographic Variables:

It includes Age, Sex, Occupation, Area of living, Food pattern, Type of Activities, Habits, Duration of Illness.

1. AGE

a. 41 to 45 years

b. 46 to 50 years

c. 51 to 55 years

d. 56 to 60 years

2. GENDER

a. Male

b. Female

3. OCCUPATION

a. Poultry Workers

b. Industrial Worker

c. Coolie Workers

d. Professional Workers

e. No occupation

4. AREA OF LIVING

a. City

b. Town

c. Village

5. FOOD PATTERN

a. Vegetarian

b. Non Vegetarian

6. TYPE OF ACTIVITIES

a. Sedentary Worker

b. Moderate Worker

c. Heavy Worker

7. HABITS

a. Tobacco Chewer

b. Smoker

c. Alcohol Drinker

8. DURATION OF ILLNESS

a**.** Recently diagnosed

b. 1 Year

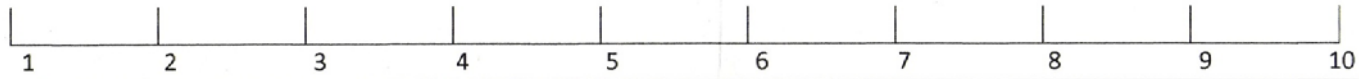
c. 5 Years

d. More Than 5 Years

HomeCare INSTITUTE

Clinical Job Aid

Dyspnea Assessment Scale



Mild Dyspnea (1-3)	Scale	Moderate Dyspnea (4-7)	Scale	Severe Dyspnea (8-10)	Scale
Can sit and lie quietly without SOB	1	Must sleep with head > 30°	4	Air hunger frequently during the day	8
Breathing not labored	1	Persistent SOB but not labored	4	Becomes frightened with SOB	8
No cyanosis	1	Worsens with mild exertion	4	Exhausted with minimal activity	8
No anxiety during SOB	1	Only partially settles with rest	4	Skin cool and clammy	8
Mild anxiety during SOB	2	Persistent SOB that is mildly labored	5	Intermittent confusion	9
Occurs intermittently during the day	2	Pauses talking longer than 30 sec	5	Talks only 2-3 words between gasps	9
More often than not during the day	3	Pauses frequently while eating / talking	6	Total concentration on breathing	9
Frequent pauses while eating	3	Must wear oxygen while eating	6	Extremities cyanotic	9
Worsens with heavy exertion (walking > 30 feet or up stairs)	3	Persistent SOB that is moderately labored	6	Agonizing air hunger	10
		Oxygen required most of day and night	7	Unable to talk or eat due to dyspnea	10
		Occurs constantly, even at rest	7	Constant confusion	10

APPENDIX: VII

INTERVENTION PACKAGE

Pursed lip breathing is one of the simplest ways to control shortness of breath. It provides a quick and easy way to slow your pace of breathing, making each breath more effective.

Uses of pursed-lip breathing exercise:

- Improves ventilation
- Releases trapped air in the lungs
- Keeps the airways open longer and decreases the work of breathing
- Prolongs exhalation to slow the breathing rate
- Improves breathing patterns by moving old air out of the lungs and allowing for new air to enter the lungs
- Relieves shortness of breath
- Causes general relaxation

Preparation forpursed-lip breathing exercise

Selection of Place

- Well ventilated
- Calm and pleasant place

Physical preparation

- Patient should be placed comfortably and relaxed.

Procedure

Pursed lip breathing technique

- Relax your neck and shoulder muscles.
- Breathe in (inhale) slowly through your nose for two counts, keeping your mouth closed. Don't take a deep breath; a normal breath will do. It may help to count to yourself: inhale, one, two.
- Pucker or "purse" your lips as if you were going to whistle or gently flicker the flame of a candle.
- Breathe out (exhale) slowly and gently through your pursed lips while counting to four. It may help to count to yourself: exhale, one, two, three, four.

Inhale

Pucker

With regular practice, this technique will seem natural to you